



Ergo Tip of the Month - June 2007

Understanding the Application and Limitations of Ergonomic Evaluation Tools

Continued Collaboration between Academics and Industry is Key to the Enhancement of our Assessment Capabilities

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Vital to the ergonomic profession are the evaluation tools that have been, and are continually being, developed through academic and industry collaborations. Whether these tools are in the form of elaborate software or simple look-up tables, they play a key role in ergonomic evaluations. These tools have been developed through human-based research and provide ergonomic professionals with the critical information about human capabilities for strength, frequency, posture and more. It must be noted, however, that most (if not all) of the available tools have been developed with **limitations**. These limitations should be understood and considered by the user.

Of particular interest is the limited availability of a tool to evaluate **multi-tasked jobs** or a combination of multiple work elements. To clarify, most of the available research for determining human task tolerances has focused on examining a particular task of interest, typically independent of other demands which would likely occur in conjunction with that task. When it comes to providing strength or tolerance limits, particularly for the upper limbs, researchers have traditionally designed their studies in this manner as it is nearly impossible to account for every permutation of work tasks that may occur across multiple industries. Therefore, at this time we do not know if, or more appropriately how, the independently determined human capability quantification would differ when combined with multiple activities or tasks.

The ACGIH, TLV for Hand Activities does provide a method of looking at a full job; however, this still assumes the user is evaluating mono-tasks. This issue is not unnoticed by either the academic or industrial communities. Currently, researchers are attempting to design studies to address this concern and determine how human capabilities would change during multi-tasked jobs. It must be stressed that acknowledging this concern **does not decrease the value or validity of our current ergonomic tools**. It does, however, provide one potential explanation for why we continue to see work related injuries despite our current breadth of ergonomic tools and knowledge. It also stresses the importance of continued collaborations between the academic and industrial communities, for reducing the risk of work-related injury and creating a healthy working environment for our employees.

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